

	A	B	C	D	E	F	G	H	I	J	K	L
1	Gamma UCL Statistics for Data Sets with Non-Detects											
2												
3	User Selected Options											
4	Date/Time of Computation 8/2/2013 11:12:02 AM											
5	From File WorkSheet.xls											
6	Full Precision OFF											
7	Confidence Coefficient 95%											
8	Number of Bootstrap Operations 2000											
9												
10	DDx											
11												
12	General Statistics											
13	Total Number of Observations	46										Number of Distinct Observations 46
14	Number of Detects	44										Number of Non-Detects 2
15	Number of Distinct Detects	44										Number of Distinct Non-Detects 2
16	Minimum Detect	0.461										Minimum Non-Detect 0.94
17	Maximum Detect	6.695										Maximum Non-Detect 0.98
18	Variance Detects	1.233										Percent Non-Detects 4.348%
19	Mean Detects	2.141										SD Detects 1.111
20	Median Detects	2.093										CV Detects 0.519
21	Skewness Detects	1.817										Kurtosis Detects 6.075
22	Mean of Logged Detects	0.639										SD of Logged Detects 0.515
23												
24	Gamma GOF Tests on Detected Observations Only											
25	A-D Test Statistic	0.585										Anderson-Darling GOF Test
26	5% A-D Critical Value	0.753										Detected data appear Gamma Distributed at 5% Significance Level
27	K-S Test Statistic	0.109										Kolmogorov-Smirnov GOF
28	5% K-S Critical Value	0.134										Detected data appear Gamma Distributed at 5% Significance Level
29	Detected data appear Gamma Distributed at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	Mean	2.08										Standard Error of Mean 0.166
33	SD	1.112										95% KM (BCA) UCL 2.366
34	95% KM (t) UCL	2.359										95% KM (Percentile Bootstrap) UCL 2.363
35	95% KM (z) UCL	2.353										95% KM Bootstrap t UCL 2.405
36	90% KM Chebyshev UCL	2.578										95% KM Chebyshev UCL 2.803
37	97.5% KM Chebyshev UCL	3.116										99% KM Chebyshev UCL 3.731
38												
39	Gamma Statistics on Detected Data Only											
40	k hat (MLE)	4.235										k star (bias corrected MLE) 3.962
41	Theta hat (MLE)	0.506										Theta star (bias corrected MLE) 0.54
42	nu hat (MLE)	372.7										nu star (bias corrected) 348.6
43	MLE Mean (bias corrected)	2.141										MLE Sd (bias corrected) 1.076
44												
45	Gamma ROS Statistics using Imputed Non-Detects											
46	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
47	GROS may not be used when kstar of detected data is small such as < 0.1											
48	For such situations, GROS method tends to yield inflated values of UCLs and BTBs											
49	For gamma distributed detected data, BTBs and UCLs may be computed using gamma distribution on KM estimates											
50	Minimum	0.461										Mean 2.077
51	Maximum	6.695										Median 2.064
52	SD	1.127										CV 0.543
53	k hat (MLE)	3.795										k star (bias corrected MLE) 3.562
54	Theta hat (MLE)	0.547										Theta star (bias corrected MLE) 0.583
55	nu hat (MLE)	349.2										nu star (bias corrected) 327.7
56	MLE Mean (bias corrected)	2.077										
57	MLE Sd (bias corrected)	1.101										Adjusted Level of Significance (β) 0.0448
58	Approximate Chi Square Value (327.72, α)	286.8										Adjusted Chi Square Value (327.72, β) 285.5
59	95% Gamma Approximate UCL (use when n>=50)	2.374										95% Gamma Adjusted UCL (use when n<50) 2.384
60												
61	Gamma Kaplan-Meier (KM) Statistics											
62	k hat (KM)	3.496										nu hat (KM) 321.7

